



AMERICAN FRUIT GROWER



**HAIL
NUMBER**

MAY, 1937

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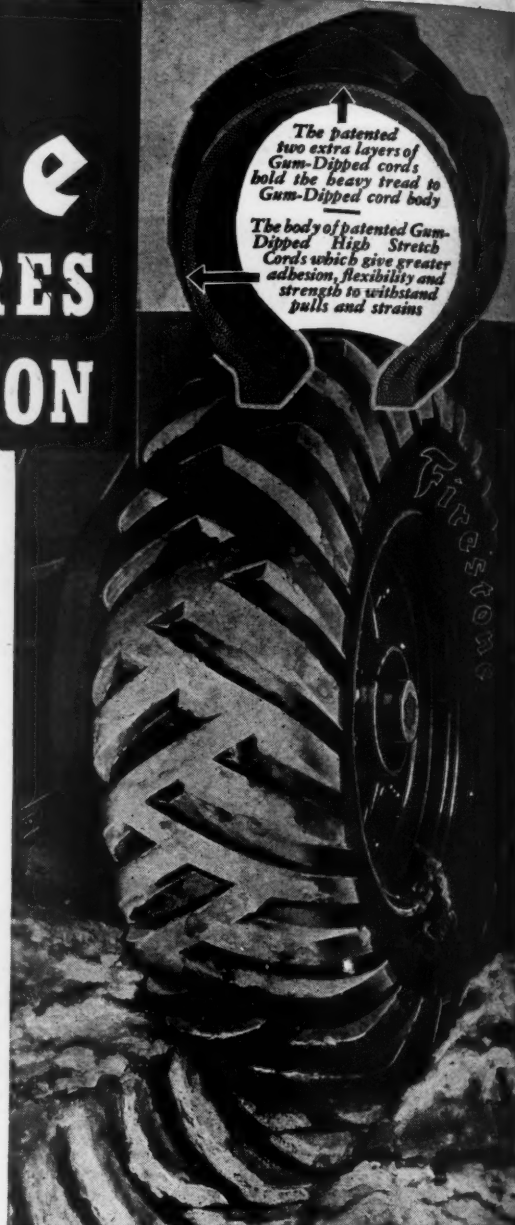
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MAY, 1937

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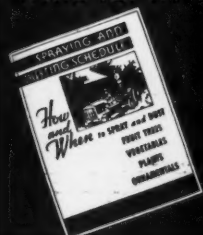
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THE GOODYEAR TIRE & RUBBER CO., INC., AKRON, OHIO

GOODYEAR

Money savers
ON THE FARM



AMERICAN FRUIT GROWER

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MAY

1937

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THE NATIONAL FRUIT MAGAZINE

NO. 5

WHY WAIT UNTIL THE HORSE IS STOLEN!

WHEN we sat down to write this editorial we were resolved to start it off with a statement which by its very originality and force would galvanize readers into protecting their crops against damage from hail.

How can one be original, however, about a danger which is so obvious? Can mere statements of fact about possible economic loss, startling though they may be, stir growers to action when each one already is fully aware of the "sword of Damocles" threat of hail? And of what avail is a dramatic word picture of the costly destruction recurrently wrought by hailstorms—since nearly every grower, at one time or another, has heard such damage vividly described by the victims themselves?

This being the case, perhaps we can best point the moral of this editorial by simply reciting the sad experience of a well-meaning grower in Massachusetts. Having successfully operated a small orchard, he decided the time had come to expand his activities. He therefore bought a large planting of fruit trees which

was located near his home. The purchase price used up practically his entire available capital, but all might have gone well if, during the first year he operated his new orchard, hail had not caused a complete loss of the crop. The poor man was forced to mortgage his original or-

chard in order to meet his obligations. He was discouraged, but not defeated, and so taking some of the mortgage money he proceeded to protect himself against hail the following season.

Today this grower says, "I now carry hail insurance regularly as a part of what I consider to be a sound orchard program but, nevertheless, I cannot help but feel I am like the old farmer who locked the stable door after his horse was stolen."

It is true that certain sections of the country suffer more from hailstorms than others, and these areas are known as "hail belts." On the other hand, U. S. meteorologists, the men who devote their lives to a study of weather, point out that only a few sections of the country—a very few—can be said to be safe from the onslaught of destructive hail at some time or another. Since no one can say with certainty just where and when hail will strike, it seems only good business for a fruit grower to avail himself of the one and only protection offered—Hail insurance!

Why wait until the horse is stolen!

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A "Round Table" Page for Every Grower

AMERICAN FRUIT GROWER

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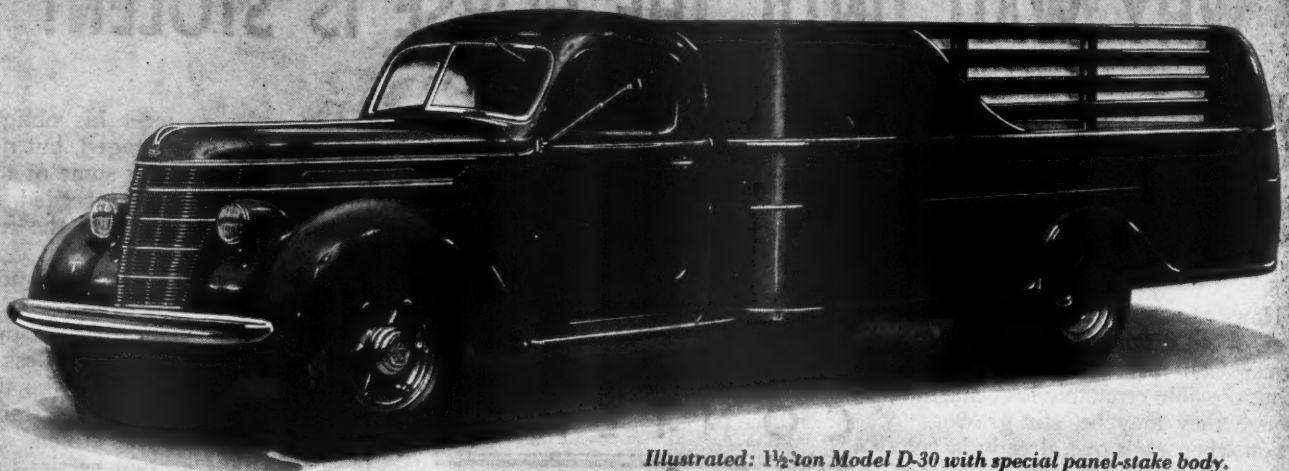
MARY LEE ADAMS

Home Economics Editor

PAGE 5

of the **FIRST SHOWING** *New* **INTERNATIONALS**

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Illustrated: 1 1/2-ton Model D-30 with special panel-stake body.

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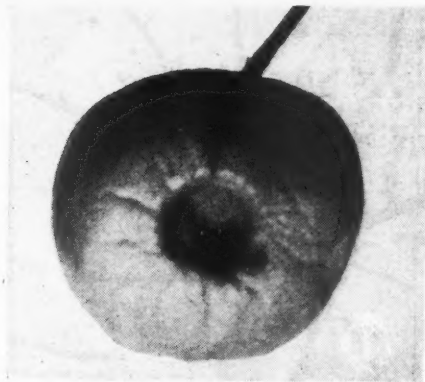
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BOMBED FROM THE SKY

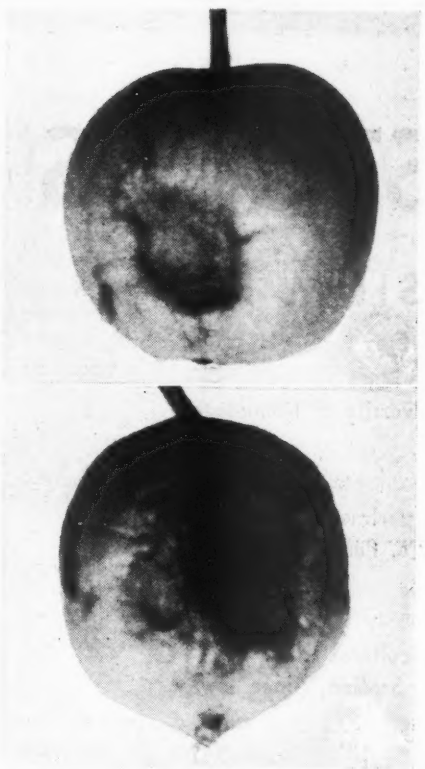
By JONAS HOWARD

NO warning siren sounded as the bombing began. Destruction dropped swiftly from the angry black clouds. Bombs, not by the hundreds nor the thousands, but by the millions, hurtled downwards and as they crashed wrought havoc everywhere, while the inhabitants crouched, silent and helpless, under what shelter they could find.

* * *

Here, you may say, is an excerpt from a correspondent's account of a recent air raid in strife-convulsed Spain—and, although our sympathies go out to the peoples of that stricken land, we are thankful, at the same time, that it is thousands of miles away.

But the aerial attack described above, the bombing from the skies and the destruction wrought, is not something that has happened or will happen far across the Atlantic Ocean. It is a word description of what happens when hail bom-



bards a fruit farm in this country.

Hail strikes without warning, here, there, anywhere. And the fruit grower is helpless. He can neither do anything to prevent its coming, nor fight it as it strikes. He can, however, protect himself against financial loss by hail insurance.

It is a sound business principle that where there are measurable risks there is a field for insurance. Since this applies to fruit growing, it holds, therefore, that hail insurance is a sound business principle. And fruit growers are recognizing this principle with the result that in recent years there has been a marked increase in the amount of hail insurance written for fruit crops.

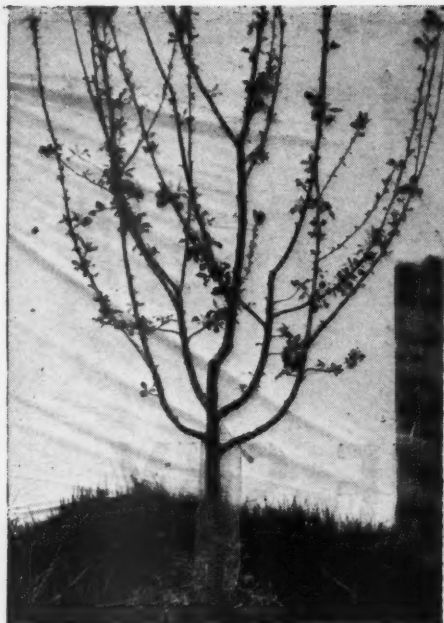
Premiums paid fruit growers in Adams and Franklin counties, Pennsylvania, for hail damage in 1936 totaled \$37,000. Claims paid for

(Continued on page 26)

Ice "bombs" wreak irreparable damage to both immature and mature fruit. Individual photographs show hail marks in undeveloped fruits.

(Below) Mature fruit beaten to a pulp by hail, in the Byrd Orchards in Virginia.





W. H. ALDERMAN

HARDY STOCKS

A SYMPOSIUM BY

W. H. ALDERMAN,
University of Minnesota

J. A. McCLINTOCK, Department of
Horticulture, Purdue University

T. J. MANEY, Iowa Agricultural
Experiment Station, Ames, Iowa

APPLE GROWERS in the Upper Mississippi Valley have long practiced topworking upon extra hardy and vigorous varieties as a means of defense against winter injury from cold. The introduction of the Russian variety Hibernial about 60 years ago made available a very satisfactory stock for this purpose. It is generally recognized as one of the hardiest of the Russian varieties and is recommended for growing in home orchards in such localities as northern Minnesota where winter temperatures of 40 degrees F below zero are commonly expected and occasional drops to —45 degrees F and —50 degrees F are thrown in for good measure.

The recent heavy loss of trees from winter injury in widely separated districts of the United States has stimulated widespread interest in a search for a variety to be used as stock. Probably there is no one best stock, for it would be very surprising indeed if all of our leading apple varieties would prove to be equally compatible with all stocks.

Minnesota growers have used extensively Hibernial and Virginia crab for topworking and to a lesser degree other crabs and such hardy varieties of apples as Duchess (Oldenburg), Patten, Anisim, and even Wealthy. Excepting the Wealthy, all of these have proved reasonably satisfactory. Hibernial, however, has been used

(Continued on page 24)

Left—Topworking will not solve all winter injury problems. Photograph shows Jonathan topworked upon Hibernial. Top is badly injured but trunk and main crotches are uninjured.

Right—Longitudinal section through graft union of Grimes topworked upon Hibernial. Note excellent union, also dark color of Grimes wood indicating winter injury to the scion. Light color of stock indicates little injury.





Left to right—Hibernal topworked to Wealthy. Note wide-angled crotches. In this tree the grafts were set a little closer to the trunk than is desirable.

Jonathan on Hibernal. Note strong framework of scaffold limbs. Virginia-crab also has this characteristic.

McIntosh on Malinda. Note fine union as indicated by knife.

Collar rot, winter injury, drought, and blister canker got this row of 25-year-old Grimes trees root grafted on French crab stock. Northwestern Greening on the right. Contrast with 40-year-old Grimes double-worked on Haas in picture on right.

Forty-year-old Grimes double-worked on Haas. This and other similar trees in the orchard have withstood all the conditions of environment which were fatal to the Grimes root grafted on French crab.

J. A. McCLINTOCK

T. J. MANEY

THE stock scion project at Purdue University Agricultural Experiment Station was begun in January, 1916.

As Grimes is one of the leading varieties in Indiana, major emphasis has been given to selecting the best stock for this variety. The original planting at Lafayette consisted of Grimes on own-rooted Astrachan, Delicious, Duchess, Fameuse, Grimes, Hibernal, Liveland, Spy, Transcendant, Virginia and Wealthy, and on Spy and French crab seedlings.

By 1930 the Grimes on Virginia crab had outstripped all of the others in growth. These results were brought to the attention of horticulturists by Dr. F. P. Cullinan in a paper published in the 1930 Proceedings of the American Society for Horticultural Science.

Since 1931, when the writer became associated with this project, the Grimes on Virginia crab have continued to lead, not only in vigor of tree growth, but also in yield of fruit.

In the 1936 Proceedings of the American Society for Horticultural Science, the writer presented evidence that Virginia crab is resistant to woolly aphis and to apple scab. Co-operative experiments with the Botany Department of Purdue University Agricultural Experiment Station have also proved that Virginia crab in all ages from one-year-old whips to 20-year-old bearing trees is highly resistant to the collar rot fungus which takes such a toll of Grimes when growing on French crab seedling roots.

In addition the Iowa Agricultural Experiment Station has pointed out that the Virginia crab is highly resistant to fire blight, and also is one of the stocks most resistant to trunk

(Continued on page 24)

IN THE summer of 1893 D. W. Lotspiech attended the World's Fair in Chicago. Along with many others he may have taken in the "Streets of Cairo," but in addition he also had the good fortune to visit the horticultural exhibit. From the latter contact he received an inspiration which in the next year led him to plant a 20-acre orchard at Woodbine, Iowa.

Now the planting of an orchard ordinarily is quite a commonplace affair, especially when root grafted or budded Jonathan, Grimes, Wine-sap, Gano, and Ralls Genet are set. However, the interesting part of this orchard was due to the fact that Mr. Lotspiech had talked with fruit specialists in Chicago and had learned something of hardy stocks. When he set his trees he also included in the planting as two-year root grafted trees a rather large number of the so-called hardy stocks like Virginia crab, Haas and Sheriff. After one year in the orchard these trees were stem grafted to the standard sorts already included in the original planting.

The writer has been in contact with the Lotspiech orchard since 1911 and knows it as one of the most profitable small orchards embraced in his horticultural experience. From 1911 to 1921 the crop averaged about 4000 bushels per year. Since then the present owner, W. P. Campbell, has continued to reap a harvest in apples and dollars. The crop of 1920 grossed \$13,000; 1921, \$6,500; 1925, \$13,000; and so on and so forth Dame Fortune has smiled on this plantation.

The success of this orchard might be attributed to pure luck as to its location; but, believe it or not, the writer has a sneaking suspicion that the regular, high production has been

materially influenced by the hardy stocks on which a good share of the varieties were topworked. Many of these trees are still in good condition and capable of producing with uncanny regularity crops of 40 bushels per tree.

Very fortunately we have a pretty good history of the Lotspiech orchard. Careful records on the condition of the trees were made in 1914 and again in 1934. The story is given in figures rather than words in the following table.

Table 1. Record of topworked apple trees in D. W. Lotspiech orchard, Woodbine, Iowa

Variety and Stock	Trees alive 1914	Trees alive 1934	Percentage of trees alive 1934
Grimes on French Crab	72	3	4.0
Grimes on Virginia Crab	22	16	72.0
Grimes on Haas	135	52	38.0
Grimes on Sheriff	9	7	77.0
Gano on French Crab	84	3	3.5
Gano on Sheriff	37	26	70.0
Sheriff on French Crab	108	66	61.0
Jonathan on French Crab	113	30	26.0
Jonathan on Virginia Crab	13	7	54.0
Jonathan on Haas	44	36	82.0
Jonathan on Sheriff	2	2	100.0

It is clearly shown that the use of the double-worked stocks Virginia crab, Haas and Sheriff has lengthened the life of Jonathan, Grimes and Gano over trees of the same variety grown as root grafts on French crab. Of particular interest is the behavior of Gano. In southwestern Iowa, where thousands of these trees existed 25 years ago, now comparatively few trees remain. The heavy loss in this variety occurred during the period of 1910-1920, during which heavy production, drought and winter injury weakened the trees and rendered them susceptible to blister canker, which finally polished them off. It is also of interest to note that during the 40 years' history of this orchard all the

(Continued on page 24)

*"9½ Minutes of HAIL
Cutting, Slicing, Pounding
....and 94.6% of Our Apples
Failed to Make U.S. No 1 Grade"*



A GROWER'S DIARY OF SWIFT DISASTER

ONE day last May Merle S. Troth of the Troth-Burton Orchards, Orleans, Ind., looked with pride at the family orchards which cover 320 acres of the hill lands in the southern section of his State. In his own words, "the trees looked the finest that season of any in all our years here. . . . Fruit all nice size and growing fine." For 11 years the Troths had been trying to get just that kind of foliage and fruit to start the season. The next day swift disaster came in the form of a pounding hailstorm. In less than 10 minutes the apples were so badly bruised and damaged that 94.6 per cent of them failed to make U. S. No. 1 grade. From his own "orchard notes" Mr. Troth tells a graphic story of just what happened, a vivid story in diary form which should serve as a warning to other growers.—EDITOR.



... "bruised, battered fruit" ...

By Merle S. Troth

May 24th—The trees look the finest this season of any in all our years here. Fine, large, flat, dark green leaves and plenty of them, even on trees with exceptionally heavy crops. No scab, no aphids, and very little foliage injury due to frost. Codling moth seems to be under absolute control. Set is extra heavy on Transparent, Duchess, Wealthy, and Rome; moderate on York, Turley, Delicious, Grimes, and Winesap; light on Jonathan, Stayman, and Dr. Matthews. Fruit all nice size and growing fine. For the past 11 years we have been trying to get just this kind of foliage and fruit with which to start the season.

May 25th—From 4:30 to 4:40 this afternoon a most damaging hailstorm hit the entire orchard. This storm also hit the Elrod and Turley orchards nearby. A bad looking cloud had been hanging in the northwest since about 1:00 P.M. Slowly it moved into the north and on into the northeast with plenty of wind and dust and a few drops of rain. About 4:00 P.M. the wind eased down to an easy breeze from the northeast, and the storm started back toward the northwest, much closer this time. Slowly it worked back into the northwest again. Then suddenly the wind whipped strong out of the northwest. In a few minutes it was upon us. The first two

minutes was a torrent of rain, then without any letup the hail started. It hailed for nine and one-half minutes, with stones from one-fourth to an inch in diameter, averaging three-fourths inch in size, rough, sharp, and jagged, and all shapes. They hit tremendously hard, and shredded leaves, cracking, bruising, and peeling the bark, breaking hundreds of small limbs, and cutting, slicing, and pounding the apples into an unbelievable condition. The destruction is exceedingly heavy, but as yet unknown. Every tree on the half section was badly damaged. Damage, however, was lightest in the northeast corner and heaviest in the southwest corner. In 12 minutes .77 inch of rain fell along with the hail which melted rapidly. However, as the storm let up there still was one and a half inches of hail on the ground, and plenty of hail was noticeable three and a half hours after the storm. The ground throughout the orchard, except in the far northeast corner, was literally covered with torn leaves, battered fruit, and dead locust (which had been flying during the day by the tens of thousands). The fine prospect and conditions of yesterday were wiped out in nine and a half minutes.

May 26th—Practically all the fruit and fully one-third of the trees look unbelievably tough. The millions of cuts, bruises, and scars on the

bark are bleeding freely and this has given the trees a very decided orange and rusty color. The majority of trees in the south 160 acres have very little foliage left in the tops and on the northwest side. Half of many apples were torn off, leaving the other half on the tree.

June 4th—The hail came at a very critical time as it effects codling moth entries. It came just one week ahead of the peak of entries of first brood; this should give the moths almost ideal conditions under which to enter the apples. We had just finished the second cover spray when the hail came, which scraped and tore off much of the fine protecting cover of spray material which we were building up on the fruit. We did not have time to build up another protective covering until after the peak hatch had come and gone. As a result, 88 per cent of the first brood codling moth entries were made through these hail cuts.

June 12th—Fruit is healing fast and reasonably well. Bark is beginning to heal very slowly.

June 16th—The majority of wormy apples are being found in the tops and on the northwest sides of the trees, which were so badly cut and torn by the hail. Practically all the trees have quit bleeding. The Bordeaux used in a spray on May 27 to 29 changed the orange color of the tree wood to a light blue.

(Continued on page 23)



"LUCKILY, WE WERE COVERED"

SAYS C. E. DUTTON, WHO HAVING TAKEN
ALL OTHER PRECAUTIONS TO PROTECT
HIS CROP, ALSO HAD THE FORESIGHT
TO SLAP ON HAIL INSURANCE

By C. E. Dutton

WHILE talking with a representative of AMERICAN FRUIT GROWER last fall, I happened to mention a hailstorm which caused us trouble during the summer. We were looking over our new cold storage equipment with which we have converted a portion of our common storage space into a cold storage of 6000-bushel capacity. If it hadn't been for hail there would have been a good many more bushels of apples in that storage room than there were when we looked it over.

The AMERICAN FRUIT GROWER field editor told me that there undoubtedly were many growers who would be interested in our experience with hail, together with a few details concerning our orchard. I have therefore prepared the following in the hope that other growers may benefit by our experience.

The Ohio Orchard Company orchard, which I manage, is made up of 120 acres, planted principally to apples. We have tried at the orchard to protect ourselves against

almost every risk we might encounter in the production of fruit. Most of the orchard is covered by an eyelet hose irrigation system. A centrifugal pump delivers water to the feed pipes from a large creek next to the orchard. We have several sprayer-water tanks located in the orchard, allowing for quick coverage at spraying time. We even purchased orchard heaters some years ago.

With all of these measures for the production of high-quality fruit, it seemed foolhardy to go without the one available protection against hail, so we invested in hail insurance with one of the old-line companies.

Principal varieties in the orchard are Transparent, Duchess, Wealthy, Grimes, Jonathan, Stayman, Rome, York, Stark, and Delicious. The trees

are planted 30 by 40 feet and the average yield for the orchard for the past 12 years has been 350 bushels per acre.

We were in the midst of summer work when one day a high wind and rainstorm broke over the community. It wasn't long until hail followed. We took for cover, helpless to do anything, as our fruit took a beating from the hail. All we could do was to thank our lucky stars (and our foresight) for having the fruit covered by hail insurance.

After the storm we hurriedly inspected the orchard. The damage was bad enough, and I immediately wrote the insurance company. Their adjuster came to the orchard and took representative samples of apples from different parts of the trees.

(Continued on page 26)

Top—The author (right) and his brother, W. C. Dutton, both prominent horticulturists. Below—Drought, insects and diseases, and frost are an unknown quantity in the Ohio Orchard Company orchards. Huge water tanks strategically located in the orchards permit prompt filling of spray tanks and save many miles of hauling, while orchard heaters, previously placed and fueled, stand in readiness for frost warnings. Other protection in the form of an irrigation system and hail and fire insurance is not overlooked.



BERRIES •

DELAYED FOLIATION

It was discovered in the spring of 1932 that black raspberry leaves infected with green mottle mosaic were slow in making their appearance. This observation led Prof. L. M. Cooley, New York Experiment Station plant pathologist, to make extensive field examinations during the spring seasons of 1933, 1934 and 1935.

Evidence from these observations, and study last spring, justify the employment of this disease characteristic as a supplemental measure in roguing black raspberry plantings for the control of green mosaic. Exception to this practice is made during seasons when winter injury has been severe.

Winter injury may retard the development of foliage in black raspberries in the same manner as mosaic. No other diseases show this tendency to retard foliation. Similar mosaic infestations when they occur on red raspberries do not retard the appearance of leaves.

"Four seasons of observations in western New York have demonstrated that black raspberry plants infected with green mottle mosaic virus tend to be retarded in development of foliage on their fruiting canes in the spring," says Prof. Cooley. "From three-fourths to nine-tenths of the infected plants were detected by this means. In fact, this characteristic is sufficiently prominent to use as a basis for a valuable auxiliary inspection and roguing, as such early inspection removes internal infection sources before the aphids which carry the mosaic virus from plant to plant become numerous and active."

CURRENT APHID CONTROL

Currant plants having crinkled, cupped leaves are usually infested with currant aphids. Where injury is severe, the leaves show a bright red color above the cupping and may drop off.

Inspection shows that there are small, greenish-yellow, flat-bodied aphids on the undersides of the leaves. During the winter, shiny, black eggs may be found on the plants. Soon after leaves appear in the spring, aphids hatch from the tiny eggs and crawl to the leaves where they begin sucking the sap.

There are many generations of aphids during the summer. Females give birth to living young which, when full-grown, repeat the process. As fall approaches, the last generation of females gives birth to both males and females which mate and produce the eggs found on the plants during the winter.



A 50-acre field of Latham red raspberries owned by the Andrews Fruit Farm, Faribault, Minn. Plants are set under the hedge-row system with one plant every 18 inches in the row and six feet between rows. A 500-case refrigerator holds the berries from this field as long as a week to meet market conditions.—ALLEN P. CHILDS.

Prime control measure for this pest is the application of a nicotine sulphate spray early in the season as the first aphids appear. One-half pint of 40 per cent nicotine sulphate is used to each 50 gallons of water. If the nicotine sulphate is used with water alone, it is necessary to add four pounds of potash fish-oil soap for each 50 gallons of spray. Excellent results have been obtained by using two per cent nicotine dusts. Whether dusting or spraying, it is important to thoroughly cover the undersides of the leaves. Currant aphids also appear on gooseberries.

PEACHES •

PEACH SOILS

It is well-known that no one type of soil is necessary for peach trees. Experiments and observations in several states, however, have shown that a deep and naturally well-drained soil is best. Recent investigations, under the guidance of Dr. Leon Havis of the Ohio Experiment Station, have shown that a soil in which roots are distributed to a depth of from three to five feet will produce more substantial trees.

Trees in the deeper soils are more likely to withstand drought, excessive rainfall, and low temperatures than are those in soils ranging from one and one-half to two feet in depth. Whether or not a soil is good for peaches may be determined, to some extent, by its color and the absence of a "hard pan" or impervious layer of soil near the surface. Brown or reddish soil usually indicates good drainage and sufficient air for root growth while brownish-gray, gray, or mottled soil usually indicates poor drainage and is undesirable for tree root growth.

Although other factors, such as elevation, relation to bodies of water, and availability of water for spraying and irrigation, are of importance in the selection of the orchard site, two of the most important essentials are depth and drainage of the soil.

TREAT BORERS NOW

While peach borer control has been centered mainly in the fall of the year, it may be advisable to use control measures in late spring and early summer. The pronounced weaknesses of many trees is just now reaching a climax as the result of injuries of the past few seasons and trees lacking in vigor are easy prey for borers.

Borers do little feeding during the winter. Higher temperatures in May are conducive to feeding and the borers may cause a great deal of girdling, thus shortening the life of the tree.

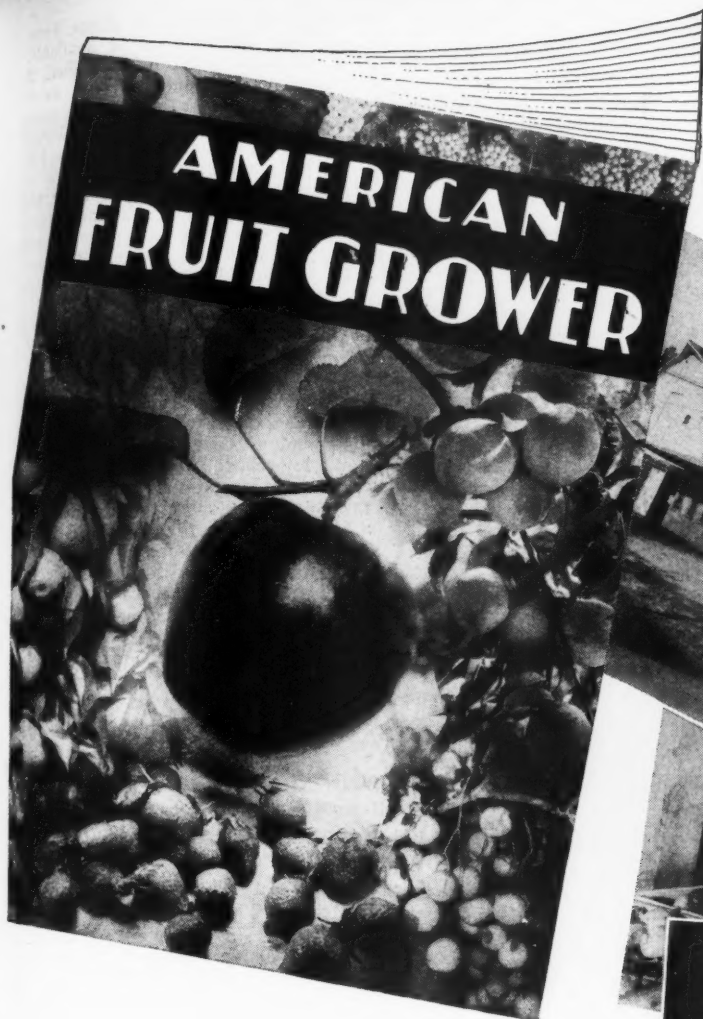
Paradichlorobenzene is an effective control for the borers and may be applied in a ring about the base of the tree. Where large number of trees are to be treated, paradichlorobenzene dissolved in an oil emulsion may be sprayed about the trees. A complete discussion of the use of paradichlorobenzene appeared in the September, 1936, issue of AMERICAN FRUIT GROWER.

PLUMS •

CULL WILD BUSHES

Recent investigation has shown that wild plum bushes act as hosts for the troublesome curculio. Where located near plum and peach plantings, wild plums should be cut down and burned.

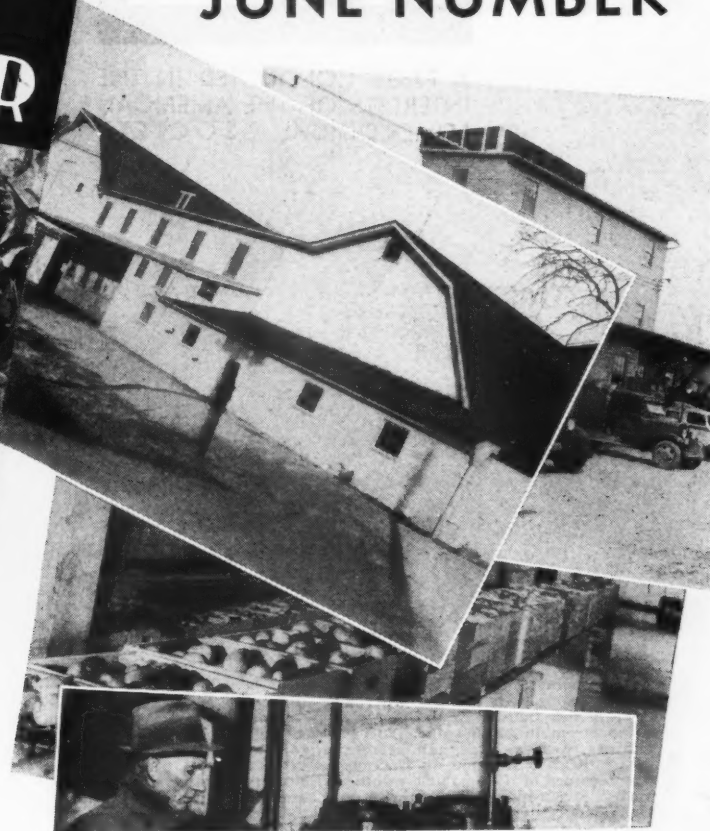
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WATCH

for the

JUNE NUMBER

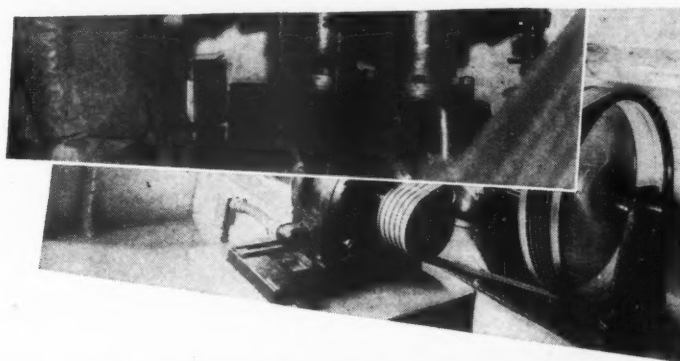


COLD FACTS ABOUT FRUIT STORAGE

THE June number of AMERICAN FRUIT GROWER will be more than just a magazine. In helpful handbook form it will tell the whole story of cold storage for the fruit farm. This will be the first time all the facts and figures about MODERN cold storage will have been assembled in publication form. And, in addition, the June issue will contain the now famous and eagerly awaited THIRD ANNUAL BUYERS' GUIDE and DIRECTORY.

Cold storage has become a BURNING QUESTION among enterprising fruit growers. And from this big question comes many smaller ones: Will it pay me to invest in my own cold storage on the farm or shall I continue to pay 15 to 25 cents per bushel for commercial cold storage? If I do build my own storage what type should it be? Mechanically cooled or common storage? What capacity? What kind of construction? What insulation? What type of refrigerating equipment?

The answer to all these questions and many more will be found in the coming June number of AMERICAN FRUIT GROWER. You will find page



ANNUAL DIRECTORY EDITION

after page of special features which in text and pictures will give a practical presentation of the dollars and sense exposition of the whole subject of modern storage, as one method of enabling the grower to enjoy top prices for his fruit, thwart unfair market practices, decrease his marketing expense and at the same time, increase his yearly income.

But that is not all! AMERICAN FRUIT GROWER's June edition will also contain the Third Annual Buyers' Guide section. This Directory does duty as an expert adviser on the selec-

tion of equipment and supplies necessary for year around operation of the fruit farm. You will find this Third Annual Buyers' Guide more complete and comprehensive than ever before, a reference book you will turn to at regular intervals throughout the year.

Watch for this double-value June issue. In it you will find the answers to the two questions now uppermost in the mind of every fruit grower: "What About Cold Storage on the Farm?" and that almost everyday inquiry: "What To Buy and Where To Buy It?"



A PAGE CONDUCTED IN THE
INTERESTS OF THE AMERICAN
POMOLOGICAL SOCIETY

ANNUAL REPORT

WE hope you liked the Proceedings of the Convention held in December at Roanoke, Va. A copy of these proceedings was sent to every paid up member of the society. If you wish a copy of this excellent report send to Secretary H. L. Lantz, Ames, Iowa, \$1.25 for annual dues for the current year of 1937, and in addition to the report you will receive a year's subscription to AMERICAN FRUIT GROWER.

ORCHARD IRRIGATION

Orchard irrigation has long been a standard procedure in the fruit growing areas of western United States. During the past six to eight years fruit growers in the East and in the Central West have gone through some drought experiences which drove some of them to experiment with irrigation, first on a small scale and then on a more extensive scale. In most cases the results were so striking that other

growers also put in irrigation plants. First of all, a water supply must be available. Once the irrigation plant is established, it is ready for its full duty as soon as it becomes apparent that the weather man isn't going to deliver the necessary water.

Enthusiasm for irrigation in the East has caught the imagination of many fruit growers. Irrigation has been a chief topic for discussion at a number of the state horticultural society meetings for a period of six or seven years. Fruit growers are not likely to abandon their irrigation plants once their experience demonstrates the value of irrigation. Scarcely a growing season passes but that hot, dry spells do damage in our orchards.

Frank H. Wissler, Mt. Jackson, Va., gives in the A. P. S. Report an excellent account of his experiences in developing an irrigation plant to cover some 140 acres of his profitable orchard. In part Mr. Wissler said concerning irrigation:

"I first became interested in its possibilities in 1917, at which time I hauled water to a few trees in barrels and found that it actually paid. Later I used a pipe from my spray water supply and increased the size of my check plot. The more I worked with it the more convinced I became of its great possibilities. During this period, I made numerous efforts to get moral encouragement, but usually met with the remark, 'Why irrigate? Our State has 42 acre inches of water a year.' The State has, but the apple belt has only about 34 inches and the bulk of it comes in the winter and spring. As a rule, we have dry periods of varying lengths in June and July, at times continuing through August and September.

"Our source of water supply is the Shenandoah River. The orchards are situated on a plateau, the highest point of which is about 92 feet above the river. The pump is centrifugal direct connected to a 50 horse power electric motor. The delivery pipe is eight-inch bell and spigot cast iron equipped with tees and three and five-inch valves at desired points. Delivered water is from 900 to 1000 gallons per minute. I can water about 140 acres with my present plant.

"Under my conditions, I have found it best to cover as much of the ground with water as possible. I take water from the hydrants, which, of course, are located on the high points, and lead it in a head ditch to a number of rows at a time, allowing a comparatively small amount of water to run down each row for a long time rather than a flood for a shorter time. I prefer to irrigate over sod rather than cultivated land as I get better penetration and much less erosion.

"As to quantity of water applied and the frequency of application, I would say that given fairly level ground and good penetration, it will take about 2000 gallons of water to the tree every two or three weeks, while close by there may be a spot that will require water in smaller quantities once a week. Ours is supplementary irrigation and what we do is dependent on natural rainfall, temperature, and wind.

"There has not been a single year since we have been irrigating that at some time I could not use water to advantage. I had my plant under full operation in 1930. We had, as you remember, an unprecedented drought. Of course, our results were abnormal, but we increased our production 400 per cent by count, weight, and measure over the dry plots. This year our increase was at least 300 per cent.

"An increase of only three-eighths inch in the diameter of your apples will double your volume. With a constant water supply, I do much less thinning, and still produce large fruit. An apple whose growth has never stopped from lack of moisture does not seem to be as susceptible to disease and blemish as a devitalized apple. I notice reduction particularly in russetting.

"I am often asked if I do not have trouble
(Continued on page 22)

AMERICAN POMOLOGICAL SOCIETY TOUR

July 5 to 25, 1937

At times the American Pomological Society has sponsored tours of fruit growing districts in various parts of the United States, arranging with local groups to provide facilities for seeing the industry to the best possible advantage. Some of the tours have been local and others ambitious in scope. Eleven years ago a successful tour was made to the Pacific Northwest with a large and representative attendance. At the annual meeting of the A. P. S. held in Roanoke in December a resolution was passed favoring arranging a tour in the summer of 1937 which would include representative fruit-growing districts en route from the Mississippi River to the West Coast, and authorizing a committee to outline such a trip, study its costs, and, if well supported, make final arrangements for its conduct.

John T. Bregger, associate secretary of the A. P. S., was appointed to prepare an itinerary and secure estimates of cost. This itinerary is submitted herewith with dates, costs, and suggested side trips. It includes both hardy and citrus fruit districts and representative small fruit areas as well. Local organizations of growers and various trade groups will make every effort to entertain and care for the convenience of the guests en route. Air-conditioned Pullmans only will be used for rail transportation. Scenic side trips are included. The families of those making the trip are especially invited to participate. Prominent professional horticulturists will attend in considerable numbers and every opportunity for a free exchange of ideas will prevail throughout the trip.

Reservations and further information will be available by addressing John T. Bregger, 209 W. Main St., Waynesboro, Pa.; President B. S. Pickett, Ames, Iowa; or the secretary, H. L. Lantz, Ames, Iowa.

PROPOSED ITINERARY

July 5	Tour Calhoun Co., Illinois	
5	Leave St. Louis—C. B. & O.	Evening
6	Visit Wathena and St. Joseph districts	
7	Leave Denver—D. & R. G. W.	7:45 p.m.
8	Grand Junction fruit districts	
8	Leave Grand Junction	9:55 p.m.
9	Visit Provo fruit districts. Leave	6:31 p.m.
10	Salt Lake City to Lund for bus tour Zion National Park	
11	Leave Lund—U. P. R. R. to Las Vegas—tour Boulder Dam	7:40 a.m.
11	Leave Las Vegas for Riverside	9:35 p.m.
12	Leave Riverside—Bus tour of Citrus, Avocado, Walnut districts	Morning
12	Arrive Los Angeles	Afternoon
13	Leave Los Angeles	Morning
14	Arrive San Francisco—tour Sonoma County Gravenstein apple region and Burbank Experimental Farm	
14	Leave San Francisco—S. P. R. R.	6:00 p.m.
15	Arrive Medford	8:51 a.m.
15	Visit pear region. Leave Medford	8:05 p.m.
16	Arrive Corvallis—Attend joint meeting of Northwest Horticulturists, Entomologists, and Pathologists. Visit Oregon State College	
16	Leave Corvallis (via Albany)	Evening
17	Arrive Portland, Ore. Columbia River Highway ride and Hood River Valley fruit district. Return Portland	Evening
18	Arrive Puyallup early a.m.—visit small fruit and vegetable sections en route to Yakima, Wash., via Mt. Rainier National Park.	
19, 20, 21	Joint meeting with Washington State Horticultural Association and side trip to Wenatchee Valley.	
22	Visit Fruitland, Idaho fruit districts, leave Payette, Idaho	9:34 p.m.
24	Arrive St. Louis	9:30 p.m.

The above itinerary of this tour can but faintly portray the great educational value of such a trip. Fruit growers and other horticulturists will see the best fruit districts of the Far West at a beautiful season of the year.

An organized tour of this kind will provide an opportunity to make many contacts that otherwise might not be available.

Estimated costs of the tour which have been ascertained by Mr. Bregger are as follows:

Railroad transportation—St. Louis and return—\$82.00.

Pullman—upper \$32.00, lower, \$40.00.

Pullman berth, when shared, cuts the cost per person by one-half.

Bus trips and their cost are as follows:

Zion Park tour.....	\$13.55
Boulder Dam all-expense tour.....	4.65
Riverside to Los Angeles.....	3.00
Tacoma to Yakima and Wenatchee (estimated).....	12.00

Proposed bus tours to cost.....\$33.10

Meals: Very good meal service is available on trains for as low as 35 cents. An allowance of about \$2.00 per day should be ample for meals.



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Helps Whip Codling Moth

THE QUANTITY AND QUALITY of your crop governs your profit. You must guard against Codling Moth. Use "Black Leaf 40" to fortify stomach poison sprays. It cuts down the attack by killing eggs and adults, as well as worms. "Black Leaf 40," reinforced by summer-oil, gives contact film control. Worms killed before they eat do not cause stings. The contact action of "Black Leaf 40" kills quickly. Avoid washing by using "Black Leaf 40" and summer-oil. For better results fortify your Codling Moth spray program with "Black Leaf 40."

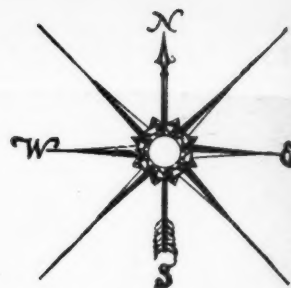
"Black Leaf 40" Kills Aphis and Other Insects: By contact and fumes, "Black Leaf 40" kills Aphis, Red Bug, Leaf Hopper, insects which injure the leaves, dwarf and gnarl the fruit.

"Black Leaf 40" is Safe to Use: Effective in great dilution, "Black Leaf 40" is not caustic, does not "burn" man, horses, trees or crops. "Black Leaf 40" is concentrated, effective, easy to mix and apply. It is volatile and "fumes off" (evaporates) from foliage and fruit. "Black Leaf 40" is sold by spray material dealers everywhere.

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STATE NEWS

FROM NEAR AND FAR



NEW YORK—Reports from various New York State fruit regions indicate trees and buds have wintered in good shape. No injury has as yet been reported. In sections which were hit by the severe frosts of 1936, trees are set for full crops. Growers are hoping to make up for last year's losses.

Western New York's Apple Blossom Festival is enlarged this year to include six counties: Niagara, Orleans, Monroe, Wayne, Genesee, and Ontario. Plan is for county eliminations and then for selection of a western New York queen from the county participants. Coronation will likely be held at Brockport May 22 or 29, followed by proper ceremonies at Fort Niagara the next day.



Grape growers in the Chautauqua area are being stimulated to new plantings by the minimum price of \$40 a ton recently set by juice manufacturers in that region. (Experienced growers believe planting may be overdone.)

Great interest is being shown in the Fredonia grape, one of the new early black sorts which ripens about four weeks ahead of Concord. It is held by some to be a great advance to the western New York grape industry.—H. B. TUKEY, Geneva.

KANSAS—With plenty of fall and winter moisture and a comparatively mild winter, fruit trees of Kansas are staging a remarkable comeback after going through the siege of severe drought and heat of the last two years.

Most Kansas orchardists and small fruit growers are taking hold of soil conservation practices. Small fruit and young orchard plantings are on the contour plan. (Fruitmen sending self-addressed stamped envelope to **AMERICAN FRUIT GROWER** will receive free details regarding this scientific method of orcharding.) Where the work is possible, old orchards are being terraced.

A bill to control and eradicate noxious weeds, directed primarily at the bindweed, has been passed by the Kansas legislature. The work will be under the supervision of the State Board of Agriculture. This bill will enable Kansas to participate in the \$50,000,000 fund appropriated for this work by Congress.—GEORGE W. KINKEAD, Sec'y, Topeka.

WISCONSIN—Survey of leading Badger fruit growers reveals they are definitely convinced of necessity of early, thorough spray applications to control apple scab. "If scab is not controlled by the pre-blossom spray, it cannot be controlled later," was the consensus of opinion.

Most Wisconsin growers apply two or three pre-blossom sprays, a delayed dormant, a pre-pink, and a pink spray. Lime-sulphur is used for the pre-blossom sprays, though many growers are looking for a later-spray substitute to prevent burning.

All the growers use from 250 to 400 pounds pressure, increasing the pressure as the foliage thickens.

Hundreds of letters daily are coming to the Wisconsin Horticultural Society office asking for information about the new Carpathian

English walnuts. About 300 pounds of the seed have been distributed this year. The supply for 1937 is now exhausted.—H. J. RAHMLOW, Sec'y, Madison.

MAINE—H. L. Chadwick of Houlton, during U. of M.'s Farm and Home Week, enthused over Dakota and Minnesota hybrid plums and cherries, Anoka apple, Beta grape, and high-bush blueberries. Reason: Hardiness is the first law of survival in northern Maine.

Howard 17 still occupies first place as New England's standard commercial strawberry, reported Dr. R. A. Van Meter of Massachusetts. The newer Fairfax, Dorsett, and Catskill, even with nine-inch spacing of runner plants, fail to surpass Howard 17 in yield.

Dr. Van Meter feels the current tendency to plant more apples in New England is sound if limited to good varieties and favorable orchard locations.

A substitute for Baldwin may soon be found if growers will join in the search by testing the more promising apple introductions and reporting results. The desired variety must be of late-winter season, hardy, attractive, and of superior quality.

Variety trials of strawberries, raspberries and grapes were reported on by R. M. Bailey of the Maine station, as follows: Howard 17 best market berry; Aberdeen a good yielder and later, but berries too soft for shipping. Hardy, attractive, disease-tolerant Latham raspberry most dependable for general planting; Newburgh has performed well, deserving consideration; Lloyd George favorably mentioned for home use. Beta grape was recommended for dependable ripening, heavy yield, preserving; Worden the best table variety tested.

Dissertation on soils by Dr. Joseph Oskamp of New York included the following: "A favorable fruit soil is the foundation for a high-yielding orchard." High yields mean lower unit costs and greater profits. Best soils in his State yield three times the crops obtained on poorest soils.

Slow draining land particularly unsuited to orcharding; a compact subsoil, shale, or bed rock within three or perhaps two feet of the surface is unfavorable for rugged root development. Shallow soil invariably means small trees and in dry years small fruits.



Dr. Donald Folsom of the Maine station reported that an eight-nozzle gun has controlled leaf and fruit scab better, burned leaves less, and russeted McIntosh fruit no more, in comparison with a single nozzle gun. The eight-nozzle gun covered trees faster than two standard guns and with less material and less personal discomfort.

Russetting of Golden Delicious, so troublesome a feature with this variety in Maine, Dr. Folsom found to occur somewhat independently of spraying, location, size of fruit or crop, or of scab-infection percentage.—J. H. WARING, Orono.

INDIANA—Prominent growers and Purdue Horticultural Department members met on

April 6 at McCormick's Creek State Park near Spencer in the interest of establishing a "Seal of Quality" for Indiana grown and packed fruits.

The plan, as adopted, will be optional to all Indiana growers. A gradual beginning is expected, which will continue to develop through the years. The "Seal of Quality" may be used only on fruit which grades U.S. No. 1 or better.

The "Seal of Quality" will denote shipping point Federal or Federal-State inspection with both full time or part time resident inspectors trained by the inspection department as the need for their services increases. The service will be available for both carload and truck movements.

The seal, placed on a blue ribbon, will be made up from the seal of the Indiana Horti-



cultural Society and furnished by that organization at cost.

Original plan was to use the seal for apples only but growers voted its use on all fruits. Assured quality is expected to attract increasingly larger numbers of buyers and consumers.

Southern Indiana strawberry growers are reorganizing in anticipation of a good crop year.—EVERETT WRIGHT, Sec'y, Lafayette.

MINNESOTA—Number of fruit buds evident in Minnesota apple orchards this year gives promise of a good 1937 crop if favorable conditions prevail during the growing season. Should the serious moisture deficiency in the soil over large areas of the State continue, it is likely to affect production to a marked extent if growing conditions are unfavorable during the next two or three months.

Where good control of codling moth is not obtained with the standard recommended spray program for Minnesota, it was suggested by A. C. Hodson, Division of Entomology, at the recent Horticultural Short Course at University Farm, that two or three cover sprays following closely the petal-fall spray be used. He recommended the first cover spray be applied about seven to 10 days after the petal-fall spray, followed by one or two additional sprays at five-day intervals.—J. D. WINTER, Sec'y, St. Paul.

RHODE ISLAND—At the Rhode Island Fruit Growers Association annual meeting Chester Dutton of the Cambridge Regional Market spoke enthusiastically of the auction market for local-grown apples. Many growers are interested in the possibilities of such a system.

Importance of thoroughly spraying the top of the tree if scab is to be controlled was emphasized by Dr. O. C. Boyd of Massachusetts State College. Under New England conditions growers should be able to spray the entire orchard in two days if good scab control is to be secured.

Dr. Philip Garman of the Connecticut Agricultural Experiment Station stressed importance of using an oil spray in the delayed

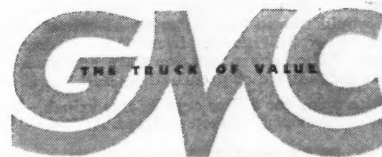
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AT A LOW PRICE ♦♦ SEE GMC



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GMC half-ton trucks are exceptionally popular among farmers because of their "truck-built" quality, performance, economy and bigness. Two sizes—112" and 126" wheelbases. Pick-up bodies 77" and 91" long. All-steel "Helmet-Top" cabs. Removable stake-racks available.



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Good reports of results on control of codling moth, apple flea weevil, and other pests, by use of *Alorco Cryolite*, are coming in from every side. Because the particles are finer, *Alorco Cryolite* sticks better, covers more thoroughly, is easier to remove. Actual orchard use indicates no foliage injury. If your dealer does not have it, write to our distributors for complete information. Aluminum Ore Company.

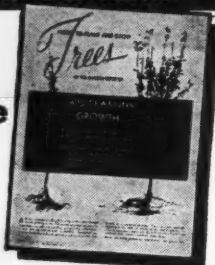
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Remember we pay the freight.

PAGE 18



Gus Nelson, Ocean Springs, Miss., citrus grower, looks over one of his grapefruit trees which is protected from low temperatures with artesian well water, as described below.

PLUMS

(Continued
from page 12)

The curculio often invades orchards where proper spray practices are followed because the grower has not removed the wild plum bushes from the vicinity of the planting.

While searching for wild plum bushes, it also will be profitable to watch for neglected cultivated plum trees. Workers at the Michigan Experiment Station have found that such trees, although they may appear healthy, harbor plum virus diseases which are spread to nearby orchards by plum leafhoppers.

CITRUS

STRANGE HEATING METHOD

With interest rampant concerning heating of citrus groves after the frost damage of January, any new or unusual methods of heating citrus groves are sure to be of interest. From Ocean Springs, Miss., comes word of a method of citrus frost protection which is as practical as it is unique. O. C. McDavid of Gulfport, Miss., is the correspondent who reports that Gus Nelson, on his citrus grove at Ocean Springs uses warm water from a large artesian well to spray the trees and thus maintains the temperature of the fruit and foliage at an almost constant figure.

Mr. Nelson has been experimenting with the use of the artesian water for the past 10 years and now has the grove piped for the delivery of the water. Cold weather has little chance to cause damage in the Nelson grove, since the water from the well is about 85 degrees F throughout the year. The only cost for this system was the initial outlay for pipe, as pressure from the well forces the water over the trees.

AMERICAN FRUIT GROWER

When not needed for warming the trees, the water is diverted into a large reservoir surrounding the well.

CHERRIES

BANDING FOR WORMS

With the appearance of foliage on wild cherry trees, there are often large numbers of caterpillar tents. If these pests were content to ravage the leaves of the wild cherry, there would be little concern over their activities. But when the leaves of the wild cherries are gone, the caterpillars migrate to cultivated cherries or other fruit trees and start their work of destruction. Since the new leaves and small shoots provide the only available food for the caterpillars, large numbers of them are often found feeding on one tree.

Fruit growers have long known that the tent caterpillar can be killed by heavy spraying with arsenate of lead. However, all of the foliage may be eaten from smaller trees before the spray kills the worms. Thus, says M. A. Blake of the New Jersey Agricultural Experiment Station, spraying with arsenate of lead may not be a satisfactory remedy for migrating, starving tent caterpillars where young fruit trees are concerned. Peach trees, especially, may be injured by the chemical when they are young.

Mr. Blake recommends that a sticky substance known as "Tanglefoot" be used to prevent the caterpillars from ascending the trees. He says, though, that it is unwise to apply this material directly to the bark of young fruit trees and that a strip of wrapping paper about three or four inches wide should be wrapped about the trunk and a band of "Tanglefoot" one-half inch in width painted on about the middle of the paper girdle.

MAY, 1937

FILBERT INDUSTRY IN THE NORTHWEST

C. E. SCHUSTER of Corvallis, Ore., discussed certain economic aspects of the filbert industry in the Northwest in a paper read at the last annual meeting of the Northern Nut Growers' Association at Geneva, N. Y.

Mr. Schuster said that the commercial development of the filbert industry began soon after the World War, at about which time the oldest of the early small plantings began to demonstrate the possibilities of production. Enthusiasm ran high and all available nursery stock was planted.

For awhile the western markets absorbed the crop at high prices, but as production increased the surplus entered the eastern markets where, because of competition with the imported product, prices dropped 50 per cent and planting decreased sharply.

During the depression filberts maintained relatively higher price levels, thus stimulating additional planting. It has been estimated that 1500 acres were set in 1935 and probably as many more in 1936. The 1935 estimate of acreage in Oregon and Washington was 9950 acres, of which about 4400 were in bearing. The greatest crop was 1000 tons in 1934, this being an increase of 900 per cent over the 100 tons produced in 1928. There will undoubtedly be heavy increases in production in the near future, which will bring new marketing problems.

Filberts vary greatly in yield, some of the older plantings producing crops of 2000 pounds to the acre. One orchard, with allowance for missing trees and pollinizers, is said to have yielded 3800 pounds per acre. These are, however, maximum yields and are given publicity. It should be noted that a survey made in 1932 of 436 acres in 36 typical orchards showed the average yield per acre as but 396 pounds. The nine orchards having the highest yields averaged 755 pounds per acre, and no orchard produced more than 1500 pounds per acre. On the whole a filbert orchard is reasonably profitable with average yields of 1000 pounds per acre.

Filbert growing requires so little special equipment that it is a good crop for diversified farms. Moreover, none of the operations requires exact timing so that the orchard work can be adjusted easily to other farm work. Many growers are able to handle their orchards entirely with family labor. Cash costs of producing the 396 pounds per acre were 2.7 cents per pound and 11 cents in non-cash to cover depreciation, interest on investment, etc.

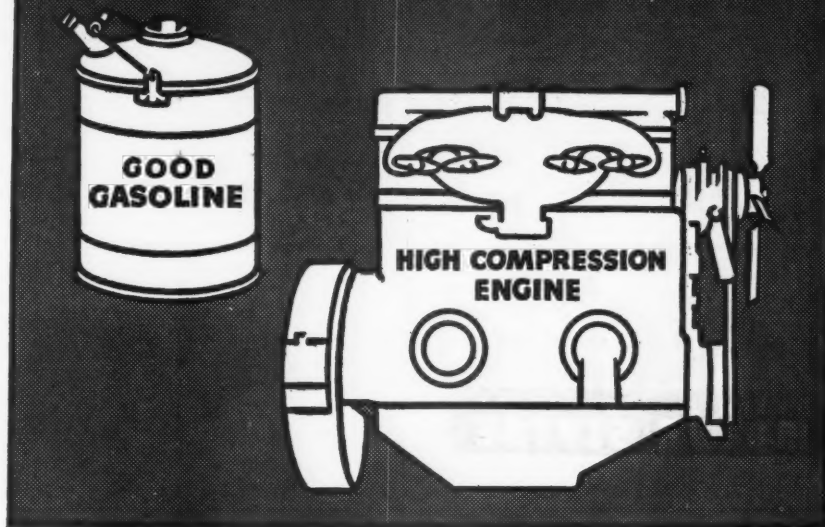
The filbert, a native of Europe, has found congenial conditions in the region between the Cascade range and the Coastal Mountains of Oregon and Washington. The greater part of the filbert acreage of the Pacific Northwest is in the Willamette Valley of northwestern Oregon and in the adjacent section of Clark County, Washington. More recently plantings have been made in Washington up to the Canadian line. South of the Willamette Valley the plantings are few and not so profitable. Very few orchards of commercial size have been established on the western slopes of the coastal mountains. East of the Cascades the same varieties are irregular in bearing.

Co-operative marketing associations handle the greater portion of the crop. All filberts are graded as to size and sold mostly in 50 to 100-pound bags.—G. L. SLATE, Sec'y, Northern Nut Growers' Assn., Geneva, N. Y.

MAY, 1937

TRACTOR POWER GOES UP

when you change to—



DO YOU want your tractor to pull three plows instead of two? Or get more work done in the same time? Or run at higher speeds? Or pull more implements? Then here's how to add the power to do it:

1 Fill the tank with regular grade gasoline, instead of low-grade tractor fuels. Then you can set the manifold to the "cold" position, and the cool mixture of air and gasoline will give more power than the hot mixture that must be used to vaporize low-grade fuels.

2 You can increase power from regular gasoline still further by high compressioning your engine. High compression gets more power out of every gallon of good gasoline, because of increased engine efficiency.

For high compressioning tractors, most tractor companies make high compression, or "altitude," pistons or cylinder heads for installation in present equipment.

When you buy a new tractor, specify a high compression engine for use with good, regular-grade gasoline.

Thousands of high compression tractors are now in use, and there probably are some in your neighborhood. Ask your friends about the extra power and economy of good gasoline and high compression.

With good gasoline in the tank, and a high compression engine under the hood, you discover oil dilution has disappeared. Your motor runs cooler. You don't have the nuisance of pulling the radiator curtain up and down. Your tractor runs in higher gears—gets work done faster. Never again will you want to run a tractor that doesn't use good gasoline in a high compression engine. Ask your tractor dealer or write your manufacturer today. Ethyl Gasoline Corporation, Chrysler Building, New York, N. Y., manufacturers of anti-knock fluids for premium and regular gasolines.

It pays to buy **GOOD GASOLINE**
FOR CARS, TRUCKS AND TRACTORS

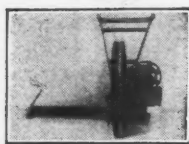
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For Your Winter Vacation

In MIAMI BEACH it's

● **THE FLEETWOOD**

Camera!



M. E. Gardner, left, head of Department of Horticulture, North Carolina State College, takes time out from the Virginia meeting to check over notes with H. R. Niswonger, center, and L. P. Watson, North Carolina extension horticulturists.



From left to right: W. J. Welday, Smithfield, Ohio; C. W. Ellenwood, associate horticulturist, Ohio Experiment Station; Tom White, Mentor, Ohio; and Tom Price, Newark, Ohio, pause before American Fruit Grower camera lens at the Ohio State Horticultural Society meeting held at Columbus.



T. J. Maney, left, Department of Horticulture, Iowa State College, meets A. Grant Fox, well-known fruit grower of Ruthven, Ont., Canada, at Virginia meeting.

AMERICAN FRUIT GROWER

MAY, 1937



E. R. GALVIN

"CATERPILLAR" APPOINTS NEW SALES CHIEF

H. P. MEE, vice-president of Caterpillar Tractor Co., announces the recent appointment of E. R. ("Ed") Galvin as general sales manager of the company.

Mr. Galvin, who is one of the most widely-known men in the tractor industry and in industrial sales circles generally, left his position as general sales manager of The Cleveland Tractor Co. in 1928 to become a district representative for "Caterpillar," contacting in the field a small group of the company's dealers. Shortly thereafter he became sales manager in charge of the eastern sales division, with headquarters at Peoria. In January, 1936, he was appointed assistant general sales manager, from which position the new appointment is a further step of advancement.

Prior to his connection with the tractor industry, "Ed" Galvin was for many years a member of the Du Pont organization, reaching with that company the position of manager of the sporting powder division. Making his work also his hobby, he long held a place close to the top among trapshooters of the United States and an enviable collection of trophies is evidence of his prowess in that sport.

Mr. Mee, who as vice-president, not only has had immediate supervision of the sales department but also direction of advertising and service activities, relinquishes the direct supervision of the sales department for the broader duties of directing all sales, service and advertising activities, and to assist more fully in general company administration matters.

Benton Harbor (Mich.) market completed one of its best seasons last fall. Total value of produce, mainly fruit, sold over the market during the past season amounted to \$4,780,-731.42, according to the report of the Federal-State Market News Service.

MAY, 1937



THAT'S what many farmers are saying these days. It's easy enough to talk economy . . . but not so easy to prove it. Ford talks economy . . . then backs up every statement made about Ford V-8 Trucks and Commercial Cars by offering you an "on-the-job" test.

This test has showed thousands of farmers how to cut their hauling costs. It has helped hundreds of farmers to choose between the 85-horsepower and 60-horsepower V-8 engines. It has proved to them that it is possible to get **BOTH** performance and economy. The 85-horsepower V-8 engine is available for any type in the Ford V-8 Truck and Commercial Car line. The 60-horsepower V-8

is available for those types that are most frequently used for light loads. With these two engines and the many body types, wheelbases and items of equipment available, Ford now offers a line of trucks and commercial cars that meets practically all farm hauling needs.

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• Convenient, economical terms through the Authorized Ford Finance Plans of the Universal Credit Company. . . . Also Special Farmer Credit Service.



FORD V-8 TRUCKS AND COMMERCIAL CARS

INSURE YOUR FRUIT CROP AGAINST

HAIL

One hail storm undoes the orchard work of months—destroys the brightest prospects for a profitable crop.

Why carry all the risk yourself? Why spend your time spraying, dusting, fertilizing, pruning, only to have it all wiped out by a single hail storm?

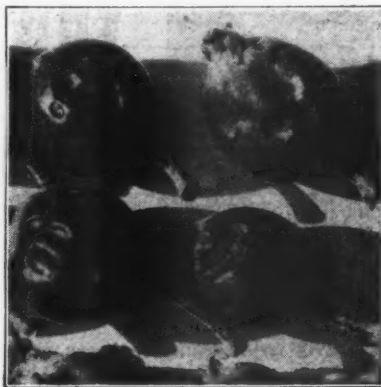
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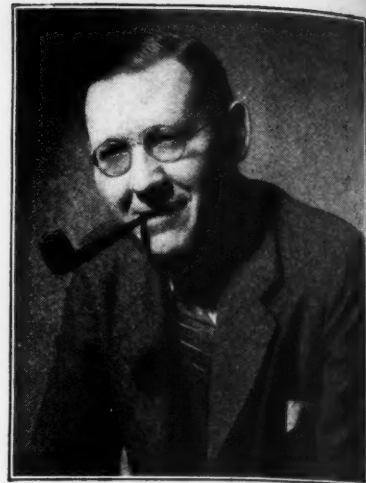
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FAIRBANKS-MORSE HOME WATER SYSTEMS
Engine or motor driven for every farm or home use



PAUL C. NORDLOH

NEW "CLETRAC" ADVERTISING MANAGER

WILLIAM ABILDGAARD, general sales manager of The Cleveland Tractor Company, announces the appointment of Paul C. Nordloh as advertising manager. Mr. Nordloh comes to the Cletrac organization with a wide experience in the tractor and industrial field. For the past three years he was with Deere & Company, Moline, Ill., where he was responsible for a large part of the advertising and sales promotional material used on John Deere tractors. Previously he was for nine years with The Procter & Collier Advertising Agency, Cincinnati.

AMERICAN POMOLOGY

(Continued from page 14)

getting color after irrigation. This is not at all the case. In fact, I get a much better color and that earlier than in the unwatered plots.

"Of course there is no way of saying definitely what an irrigation system will cost, for this is entirely dependent on the amount of lift and the distance you have to convey the water. The pipe, of course, is the item of greatest expense. Our present investment in our irrigation plant is \$7,663.35. I might add that it more than paid for itself in the season of 1930 alone.

"To sum it all up, irrigation will produce a greater yield of high-quality fruit at a very moderate additional expense, but let me sound a note of warning. Do not rush into this work without a thorough knowledge of all the conditions of your own irrigation problem. Be sure that you have ample water at the time you need it, that your lift and distance is not prohibitive, that your contours are practical, and that your low spots will drain or can be drained. Consult your own state agricultural engineers. They are trained experts and I am sure that you will find them ready and eager to render you every assistance."

The benefits of orchard irrigation were emphasized by three prominent fruit growers at the 70th annual meeting of the Ohio State Horticultural Society at Columbus in January. C. E. Dutton, Milford Center, Ohio, former president of the Ohio society, and now vice-president of the A.P.S., concluded his discussion by stating, "Our experience with irrigation gives us bigger and better apples, maintains our trees in a more vigorous and healthy condition, and, as a result, we find that irrigation has paid in a big way in our orchard under the conditions which have existed during the past seven years."

A. L. Lantz
SECRETARY

A DIARY OF SWIFT DISASTER

(Continued from page 10)

June 22nd—Fruit is mostly healed (corky). Even apples with one-quarter torn away and showing the seeds are often healing and remaining on the tree. No new growth showing as yet on the severely injured sides of the tree.

June 26th—The hail cuts and dents seem to be more noticeable as the fruit increases in size.

June 30th—An inch of rain fell from 2:30 to 3:30 P.M., accompanied by a very heavy wind and two minutes of heavy hail. This hail hit only the north half of the orchard and was of round stones one-fourth to one-half inch in diameter. This hail did little damage to any of the fruit except the early varieties, which were much softer than the late varieties as harvest was just starting on Transparent. This hail did heavy damage to the Purdue Experimental Orchard three-fourths of a mile to the northeast.

July 6th—The hail that hit the Transparent and Duchess blocks so hard on June 30 is very noticeable now in the form of thousands of chocolate colored dents and cuts. It is really causing more cullage than the much heavier hail on May 25. The earlier hail damage is well corked over and healed, while the last hail damage is raw and unhealed, with thousands of fruits starting to decay at the injury.

July 8th—The hail of May 25 along with the increased damage from the one on June 30 has made it almost impossible to find a good No. 1 Transparent.

July 14th—The trees had stood the drought and severe heat fine up until yesterday. The hail took off so much of the foliage from the tops and west and northwest sides that as a result thousands of apples are becoming sunburnt.

July 23rd—The hail injury is still very noticeable in the form of torn and ragged leaves and by the absence of many that were torn off. Also, an arsenic injury seems to be developing around the cuts and tears in the leaf. It will be a pleasure to see this hail-torn, drought-ridden crop of fruit off the trees, as well as these ragged and abused leaves. The hail wounds on the bark are mostly well healed now. The hail-cut fruits, while in some of the most wierd and contorted shapes imaginable, have done a splendid job of healing, but are seriously blemished and disfigured. These fruit cuts have healed over with a brownish black-like cork which resembles the tree bark. It is loosening and sloughing off now.

(Continued on page 27)

ONE DAY

TWENTY-FOUR HOURS IN THE LIFE OF A FARM TELEPHONE

- 1 Children invited to ice cream party by telephone.
- 2 Mother telephones to call off an appointment.
- 3 Father makes Long Distance call to portable mill operator.
- 4 Relatives invited to Sunday dinner.
- 5 Father telephones for market reports.
- 6 Father telephones from town asking what to bring out.
- 7 Relatives telephone from neighbor's, saying they couldn't make it to the farm, due to slippery roads.
- 8 Mother telephones neighbors, asking if any one has cucumbers for sale.
- 9 Call from portable mill operator telling father he will arrive first thing in the morning.
- 10 Neighbors telephone invitation to reunion.

As shown by this record of calls, the telephone is an important partner in farm life. It carries your voice to the market place and it minimizes suspense and doubt in your daily activities. Doctor, veterinarian, neighbor, and friend are always within reach by telephone.

BELL TELEPHONE SYSTEM



*Lead + oil to protect the fruit
Hamilton Guns are
the best to shoot
Will Hamilton*

Spray Guns with Controlled Streamline
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NEW MODELS
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PAGE 24

HARDY STOCKS

A SYMPOSIUM

(Continued from pages 8 and 9)

By W. H. ALDERMAN

more than any other and is perhaps the nearest approach to the desired "best all around stock."

Hibernal is a large, vigorous, fast-growing tree with heavy, wide-spreading branches and a relatively open top. Of special interest is the fact that the branches form very wide-angled crotches in which splitting is practically unknown. If a graft fails to "take," shoots from lower buds will continue a straight, outward growth in the direction taken by the original branch. Such shoots on a Virginia crab often make a crooked growth in an upward direction and are frequently useless for later grafting. This is perhaps the major point of superiority of Hibernal over Virginia crab. Fire blight is often an annoying factor in topworking operations. Hibernal, although far from immune, is at least partially resistant to this disease.

Let no one gain the impression that by topworking a tender or semi-hardy variety upon Hibernal he has transformed that variety into a hardy one that will no longer be subject to winterkilling. This is far from the truth. It even may be questioned if the tender top derives any hardiness or, more properly speaking, cold resistance from its hardy stock. It may happen under conditions of extreme cold that the scion top may kill back to the graft union and the stock remain uninjured.

What topworking does accomplish is to provide a hardy trunk and crotch system for those varieties that frequently suffer from trunk or crotch injury. To accomplish this purpose most effectively, the grafts must be set in the main scaffold branches from eight to 12 inches out from the trunk. Setting a single graft into a hardy one or two-year-old whip merely provides the future tree with a hardy trunk and leaves the main crotches no more resistant to winter injury than in an ungrafted tree of the same variety.

Formerly, Hibernal was extensively propagated by northern nurseries in the Midwest but the development of hardy varieties of better quality has reduced the demand and these nurseries are now growing only small quantities or have ceased propagating it altogether. A recent survey showed only nine Minnesota nurseries offering this variety for sale in 1937. With the renewed interest being shown in Hibernal for topworking purposes,

nursery propagation is being increased and an ample supply will doubtless become available in two or three years.

By J. A. McCLINTOCK

and crotch injury caused by low temperatures.

With so many desirable traits it is but natural that many commercial growers should ask whether the Virginia crab is an equally good stock for other varieties. The only additional evidence which the Indiana experiments afford to date is a block of Ben Davis on various stocks at the Mitchell substation. These trees are about the same age as the Lafayette plantings of Grimes, and it is no exaggeration to state that the Ben Davis on own-rooted Virginia crab are much better than those on other stocks, both in growth of trees and yields of fruit.

In recent years the red strains of a number of commercial varieties have come into prominence; therefore, our later plantings at Purdue have consisted chiefly of these red bud sports topworked into the scaffolds of own-rooted Virginia crab stocks. From these test blocks it is expected that evidence regarding the affinity of these promising new varieties for Virginia crab will be obtained. For years nurseries have raised all varieties on French crab seedling roots and orchardists have noted marked differences in affinity. If own-rooted Virginia crab will impart to scion varieties even a portion of the vigor which the Purdue tests prove it gives to Grimes and Ben Davis, then the substitution of Virginia crab for French crab as a rootstock will be a step forward in commercial horticulture.

The Indiana evidence is entirely with Virginia crab on its own roots and we are continuing our experiments with own-rooted stocks because to date we have seen no experimental evidence that Virginia crab, used as an intermediate, will impart increased vigor to either the scion or the French crab root system.

By T. J. MANEY

vicissitudes of midwestern climate, ranging from -40 degrees F. cold to 115 degrees F. summer heat, plus droughts and lack of winter snow cover, were experienced.

In the Midwest we have had from time to time what are known as test seasons, consisting of extremes in winter and summer temperatures ac-

complicated by deficiencies of moisture. The characteristics of such seasons are best illustrated by setting down some figures to show the temperature extremes which occurred in Iowa during 1936.

Table 2
Representative Iowa Minimum Temperatures

January 1936		
18. —5°F.	25. —22°F.	
19. —18	26. —16	
20. —22	27. —14	
21. —3	28. —13	
22. —26	29. —15	
23. —22	30. —14	
24. —9	31. —20	

February 1936		
1. —11°F.	8. —15°F.	15. —10°F.
2. —12	9. —16	16. —14
3. 5	10. —14	17. —10
4. —13	11. —15	18. —18
5. —27	12. 0	19. —20
6. —8	13. 4	20. 1
7. —6	14. —17	21. —5

Representative Iowa Maximum Temperatures

July 1936		
1. 93°F.	11. 104°F.	21. 93°F.
2. 95	12. 103	22. 105
3. 109	13. 106	23. 102
4. 111	14. 109	24. 105
5. 106	15. 109	25. 111
6. 102	16. 111	26. 114
7. 99	17. 109	27. 99
8. 99	18. 109	28. 101
9. 103	19. 106	29. 88
10. 104	20. 93	30. 92
		31. 91

Mean Maximum—102.6°F.

Similar seasonal atrocities also occurred in 1843, 1855, 1866, 1872, 1882, 1884, 1894, 1899, 1918, and 1936. Iowa fruit growers learned lessons from these extreme conditions. The earliest orchard plantings were almost entirely wiped out by the winter of 1843. These orchards consisted of Baldwin, Rhode Island Greening, Yellow Newtown, Grimes, Jonathan, Maiden Blush, Spitzenburg, etc. In fact, practically every apple variety originated in the United States has been tried out in Iowa. At the World's Fair in Chicago about 500 varieties were shown in the Iowa exhibit.

Very fortunately there were included in the early plantings certain hardy varieties like Red Siberian, Hyslop, Transcendent, Hewes Virginia crab, and miscellaneous natural seedlings. These sorts were able to take it on the chin and, along with similar hardy types, were largely used as stocks for topworking in the orchards next planted. Later Hiberna, Virginia crab, Charlamoff, Antonovka, Malinda, Haas, Sheriff, and others came into the picture. These varieties were used extensively by the older growers and the oldest trees still existing in Iowa were topworked mainly by stem grafting.

Of all the stocks which were used, Hiberna and Virginia crab have been outstanding. However, we now feel that there are many others which may

(Continued on page 28)



MULHOLLAND ORCHARD COMPANY, North Los Angeles, California, cultivates 35 acres of irrigated walnut grove in 10 hours, on only 18 gallons of 5c Diesel fuel—with their Orchard Model "Caterpillar" Diesel RD4 pulling the 9-foot offset disk.

\$300 to \$500 Annual Savings

To deep-disk this acreage daily used to require 35 gallons of 10c gasoline. Thus, the Diesel RD4 is saving \$2.60

per day. Savings of \$300 to \$500 per year on fuel are commonly reported by "Caterpillar" Diesel Tractor owners.

Savings Turned into Profits

Many "Caterpillar" Diesel Tractors have each worked 12,000, 15,000 and more hours—and are still going strong. Turning large fuel savings into profits with dependable performance and low up-keep!

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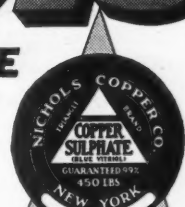
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BOMBED FROM THE SKY

(Continued from page 7)

hail-damaged apples and peaches in the Keystone State last summer amounted to \$63,000. Conservative estimates place the yearly loss of tree fruits due to hail in this State alone at approximately \$250,000. This would indicate that hail has robbed Pennsylvania fruit growers of an income of \$3,000,000 during the past 11 years. This situation is similar in any fruit locality.

Starting in the East with a modest beginning, hail insurance protection is rapidly spreading throughout the Middle West. Most of the insurance companies have organized their business into definite territories.

The maximum amount of insurance allowed tree-fruit growers per acre is \$300. For brambles \$250 per acre is allowed, while the maximum coverage for grapes is \$200. These amounts may vary with different sections and with the various companies writing the insurance, but in general they are uniform. While the rates offered by the companies are usually identical for a given district, the difference may be marked between sections in a given state.

The applications and results of hail insurance may best be considered from the standpoint of an actual insurance example.

Expense incurred in taking care of an orchard is the first item for consideration. Cost of all cultural operations to bring the fruit to maturity, let us say, will amount to \$50 an acre. This cost, should the fruit set warrant, is the least the grower should carry for protection. Should the fruit on his farm show exceptional promise, the grower insures it for 100 per cent of its value. Estimates indicate that there will be a 6000-bushel yield. If the grower estimates that the crop will bring \$1 a bushel, he will take out a \$6000 hail insurance policy. Coverage totals \$300, or the maximum amount for a 20-acre orchard. Cost of such a policy is usually four to six per cent of the value of the insurance.

A severe hailstorm occurs on a July afternoon. Immediately after the storm the grower examines his orchard carefully and estimates the severity of the damage. This estimate is entered on the notice of loss received with the policy, which he forwards to the company.

The company advises their adjuster of the situation and the latter inspects the orchard to make a percentage loss adjustment. Settlement is made on this basis. Some companies do not make final adjustments until after the fruit has matured, although an inspection of the orchard is made soon after the storm.

Policy rates are usually the same whether the policy is taken out in June or September.

The percentage-deductible policy, another form of hail insurance, caters to the grower desiring greater coverage on severe losses. Should a grower hold a 10 per cent deductible policy and his fruit is ruined, he is paid only for the loss over 10 per cent of the total crop. If he holds a 10 per cent deductible policy and 35 per cent of his crop is destroyed, he is paid for 25 per cent of the loss. This policy carries a lower rate.

Experience and standardization enable the insurance company adjusters to expertly determine the amount of destroyed fruit. Under one prominent system, an orchard is examined as a whole and then the areas suffering the greatest and the least damage are agreed upon. Samples are taken from trees in each of these areas to obtain a cross section of the crop condition. Hail damage is usually more severe on the windward side of the tree. Samples are taken from this side, from the leeward side, and from points halfway around the other sides. A strip is selected from the lowest branches to the top of the tree and all of the fruit in this strip is picked to make up the sample.

The samples of fruit are graded into the following classifications: Commercially sound, slight damage, severe damage, total loss, and culls. The latter includes fruit thrown into the cull classification for other causes than hail. No allowance is made for such losses. When the fruit has been classed and counted, the percentage of loss is computed and adjustment is made on the basis of this figure.

"LUCKILY, WE WERE COVERED"

(Continued from page 11)

These were divided into Federal grades. The reduction in the number of apples in each grade, caused by hail, was noted and the percentage of loss was determined in this way. Settlement was made on the percentage basis on the amount of insurance carried.

We plan to continue with hail insurance as it is impossible to tell when hail is liable to come, and such protection is relatively cheap when you consider what may happen if you are not covered.

Hail insurance stood us in good stead last summer and when anyone asks me about our troubles with hail, I just say, "Luckily, we were covered."

A DIARY OF SWIFT DISASTER

(Continued from page 23)

July 30th—After the heavy rain last Saturday the trees look the best they have looked since the hail. While the hail has caused a very heavy loss of leaf the trees seem to have made good buds for next year's crop.

August 7th—For the past few days many of the severely hail-cut apples are cracking badly—even Turley and Winesap which we have never known to crack before.

August 17th—Considering the severe punishment the foliage has taken this season, it still looks reasonably well even though the ground under many of the trees is well covered with leaves.

October 1st—Even if no other factor than destruction of fruit and foliage by hail had been considered this season, the loss would have been exceedingly heavy. The hail injury to the leaves and fruit has caused a tendency to increase the injury from codling moth, drought, sprays, and size of fruit has been affected. Although the hail injury gave codling moth a fine opportunity to get into the fruit, the total codling moth injury at harvest was less than seven per cent. We believe that the oil used as an ovicide with the lead in every spray after the hail played the leading role in preventing codling moth from taking the crop.

Because of hail injury, 94.6 per cent of our fruit failed to make U.S. No. 1 grade.

It is hard for me to think what an apple tree *can't* stand. Even after spring frosts, hail, heavy first brood sprays, locust by the millions, spray injury, drought and unprecedented heat, all coming in one season, these trees seem to have produced a fine crop of fruit buds for the coming year and looked very respectable on October 15.

John W. Lucabaugh, prominent Adams County (Pa.) fruit grower, was chosen one of Pennsylvania's Master Farmers at the State Farm Show. Another Pennsylvania grower, Alan T. White, Montgomery County, received this coveted award. Both growers are active members of the State Horticultural Association of Pennsylvania and consistently produce quality fruit.

Planting of Meyer lemon trees and production of this fruit has been steadily increasing in the south Texas citrus belt. This variety has proved to be as resistant as grapefruit to low temperatures. Its aromatic flavor, juiciness and thin skin have aided in its recognition as a superior lemon.

Good News!

A Safener for Lime Sulphur—Lead Arsenate Spray Combinations

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For years Apple Growers have been asking for a product that will prevent the damaging reaction when Lead Arsenate and Lime Sulphur are combined. In answer to this demand, Stauffer has perfected "Magnetic" Catalytic Sulphur which, when added to this spray combination neutralizes the injurious chemical compounds that damage your crops.



Lead Arsenate and Lime Sulphur ordinarily react when used in the same spray tank and form injurious soluble arsenical compounds and black lead sulphide sludge. "Magnetic" Catalytic Sulphur effectively retards this reaction. It also speeds up the normal Lime Sulphur set and acts as a spreader and sticker. The 80% pure Sulphur in "Magnetic" Catalytic Sulphur also helps to control scab.

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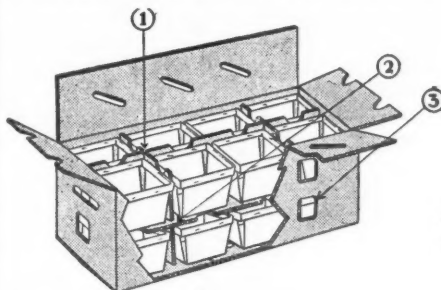
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TODD ORIGINAL HOSE SWIVEL, \$1.25 EACH. A. B. TODD, Vermilion, Ohio.

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FROSTPROOF CABBAGE, EACH BUNCH FIFTY, mossed, labeled variety name, Jersey Wakefield, Charleston Wakefield, Succession, Copenhagen. Early and Late Dutch, postpaid: 200, 65c; 300, 75c; 500, \$1.00; 1,000, \$1.75. Onion: Crystal Wax, Yellow Bermuda, Sweet Spanish, Prizetaker. Prepaid: 500, 60c; 1,000, \$1.00; 6,000, \$3.50. Tomato: Large, well rooted, open field grown, mossed, labeled with variety name, Livingston Globe, Marglobe, Stone, Baltimore, June Pink, McGee, Earliana, Gulf State Market, Early Detroit. Postpaid: 100, 50c; 200, 75c; 300, \$1.00; 500, \$1.50; 1,000, \$2.25. Pepper mossed and labeled, Chinese Giant, Bull Nose, Ruby King, Red Cayenne. Postpaid: 100, 65c; 200, \$1.00; 500, \$1.75; 1,000, \$2.50. Full count, prompt shipment, safe arrival, satisfaction guaranteed. UNION PLANT COMPANY, Texarkana, Arkansas.

FIELD GROWN TOMATO PLANTS—EARLIANA, BON-ny Best, Pritchard, Marglobe, Baltimore. Plants ready April 15 to June 15. Postpaid: 300, 80c; 500, \$1.50; 1,000, \$2.50. Collect: \$1.75 per 1,000. Ruby King, California Wonder Pepper, Black Beauty Eggplant. Postpaid: 100, 75c; 500, \$2.00; 1,000, \$3.00. Collect: \$2.50 per 1,000. Write for catalog of other plants. Satisfaction guaranteed. PIEDMONT PLANT COMPANY, Albany, Georgia.

SWEET POTATO PLANTS, IMPROVED NANCY Halls. Strong, vigorous, well rooted. 300—60c; 500—80c; 1,000—\$1.35. Safe arrival guaranteed. MARGRAVE PLANT FARMS, Gleason, Tennessee.

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PAGE 28

STATE NEWS

(Continued from page 16)

dormant period for European red mite control. He predicts we are going to find summer oil a necessary addition to the spray program.

Use of a complete fertilizer, to promote vigorous cover-crop and grass growth, was advocated by Harold Rogers of Southington, Conn.—E. P. CHRISTOPHER, Sec'y, Kingston.

ILLINOIS—Freak winters breed queer off-Spring. Even with the mild winter many Illinois peach orchards will bear very light crops this year. In many orchards where heavy pruning was practiced in 1936, bud set is extremely light. Orchards in some sections located on what have been considered the most choice sites have suffered severe bud killing at temperatures which have never before been known to kill peaches.

Interest in an apple scab control program has been paramount in the minds of growers. We have been advised that with many trees in weakened condition due to the severe winter of 1935-36 and the extreme heat and drought of the past summer, a severe scab infection would probably result in the loss of many trees.

Cool weather of March and April has delayed advancement of fruit buds. Our blooming season will be somewhat later than that normally experienced.—JOE B. HALE, Sec'y, Salem.

SOUTH DAKOTA—Demand for the good, dependable black raspberry Robertson has depleted John Robertson's (Hot Springs) 1937 supply. This variety is hardy, grows vigorously, and has large, succulent, rich-flavored berries. It is truly adapted to South Dakota's peculiar climate.

Intensive propagation of Dr. N. E. Hansen's hardy apricots is planned by nurserymen in order that planting stock for general distribution may be available in a few years.

Summer meeting of South Dakota State Horticultural Society: June 19 and 20. Place: Dell Rapids. Speakers: Dr. N. E. Hansen, Prof. L. L. Davis, State Forester Frank I. Rockhill, and others prominent in the fruit world. The tour on the 20th will include orchards and gardens in the vicinity and Dr. Hansen's plant breeding workshop at Brookings.—W. A. SIMMONS, Sec'y, Sioux Falls.

PENNSYLVANIA—Pennsylvania Division of Appalachian Apples, Inc., inspired by success of its 1936 venture, increased the assessment per bushel on U. S. Utility or better grades from one-half cent to one cent for 1937's greater promotional program.

Except for a reduction that might follow the serious damage from cicadia in 1937, fruit prospects in Pennsylvania are very bright. In no case has the number of winter-injured buds been adequate to cause a reduction of the crop. Several cases of winter injury on apple trunks have been observed, the injury being most severe on early pruned trees.—J. U. RUEF, Sec'y, State College.

TENNESSEE—From R. L. Wallace, a grower of high quality fruits near Knoxville, we learned a new (to us) wrinkle in vineyard practices.

SALESMEN WANTED

GOOD TERRITORY STILL AVAILABLE TO FARMERS and others interested in earning attractive profits selling BUTLER all-metal, low priced Fruit Graders weighing only two hundred pounds, occupying only four square feet, and "Handling the Fruit with Rubber Gloves." No bruising. State county desired. Act quickly. BUTLER MFG. CO., Bell Building, Chicago.

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TREE BANDS

BETA-NAPHTHOL TREATED TREE BANDS "SURE KILL" the codling moth worms. Write for prices and free literature. M. A. KOELLER, Barry, Illinois.

AMERICAN FRUIT GROWER

He uses corn husk strips to tie his grape canes to the wires. The husks are dipped in a pail of hot water a short time before using and the husks then tear readily into narrow strips of convenient length.

Two weeks after blooming started reports indicated that most of the State may expect peach crops but slightly under normal, although the Jackson area reported a 100 per cent killing of buds.

Early varieties of apples were in the pink first week of April and all sections of the State showed prospects of a heavy bloom.

Strawberries started blooming in January and successive blooms have been destroyed. Because of rather poor stand of new plants in 1936, and with all plantings weakened by drought, prospects are for a light crop this season.—A. N. PRATT, State Horticulturist, Knoxville.

HARDY STOCKS

By T. J. MANEY

(Continued from page 25)

be just as good or even better. The experience of the Lotspiech orchard shows that these hardy stocks increased the life of the orchard trees, and of course this means dollars to the grower.

Only in the past five years has the corn belt been forced to relinquish its claims for all-time records on cold, heat, drought, collar rot and other incidents which work to the disadvantage of successful fruit growing. Now fruit growing sections all over the country have experienced disastrous climatic setbacks, with the resultant loss of millions of bearing trees. Above all, don't get the notion that it may not happen again.

Particularly in regard to apples, right now seems to be the opportune time to lay the foundations for long-lived orchards. In the opinion of the writer, this objective can be best achieved by building on hardy resistant stocks, of which Hibernial and Virginia crab for the present hold the spotlight.

In the nurseries a supply of these stocks is almost non-existent. When the supply does become available, the wise grower should secure these trees as root grafted and not as budded trees. Budded stocks are not hardy under severe conditions.

Plant the hardy stocks in the orchard and bud or graft them to the standard varieties well out (12 to 18 inches) on the scaffold limbs of the stock in order to utilize the splendid wide-angled crotches of the hardy varieties. The older growers made a mistake in practicing stem grafting. The result will be orchard trees which are resistant to collar rot, drought, heat, cold, trunk and crotch injury; trees which will carry a heavy fruit load without crotch splitting and, most of all, long lived trees, which mean material savings in the high cost of red ink on the books of the fruit grower.

MAY, 1937

NEW

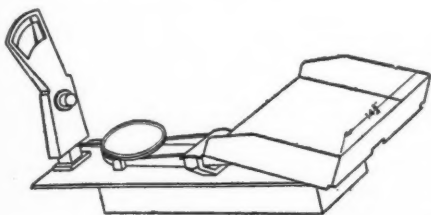
- Fruit Scale
- Respirator
- Soil Testing Outfit

By HANDY ANDY

It's all right to let Nature take her course (for most of the time she knows what she's doing) but I claim it doesn't do any harm to nudge Nature once in awhile. That's why I try each month to present new products and ideas on this page—things that nudge Nature, so to speak. You probably have some ideas that are new and helpful, so just drop me a line about them. The address is Handy Andy, American Fruit Grower, 1370 Ontario St., Cleveland, Ohio.

FRUIT SCALE •

At last a scale has been designed and manufactured especially for the exact weighing of fruits and vegetables for consumer packages. The scale, shown in the accompanying illustration, is particularly well adapted for use on the fruit farm. It can be regulated for weighing spray materials and other odd jobs that are the lot of the fruit grower's scale.



With this scale it is possible to pack to the accuracy of one-tenth of a pound. This will do away with overpacking as well as complaints because of underweight. The scale as illustrated has a base which can be countersunk in the packing house table or bench. It is also available with a regular base, providing a movable unit. The large, handy commodity tray makes possible rapid and efficient operation.

Trimming labels, cutting grafting tape, and a hundred other uses are sure to make the scissors dull. I've just heard of an easy way to put a keen edge back on the shears that will do a good job and do it in a hurry. Just take the scissors and cut through a sheet of fine sandpaper several times.

RESPIRATOR •

Clouds of swirling spray chemicals always sort of "get me" for a minute or so. I think the worst place to get a whiff of the chemicals is in a stationary spray plant shed. It's bad enough, though, when you're mixing the chemicals for a portable rig. The respirator



shown will prevent breathing the chemical dust into your lungs. It is light and durable and fits snugly over the mouth and nose. The filtration area, or that part of the respirator that catches the dust, is wide and permits maximum protection. Those who have used this respirator say its new features make natural breathing possible. The arrangement of the headband permits the wearer to use goggles.

If you ever want to remove a nut from a bolt that has a round head, it can be easily done by placing the head of the bolt in a vice between two old files.

SOIL TESTING OUTFIT •

We often hear the saying, "The soil and air furnish the raw materials for the fruit industry." It's pretty certain that the air contains the right materials, but it isn't always so certain that plant nutrients are in the soil. Cover crops, especially, need a good many of these nutrients and with the

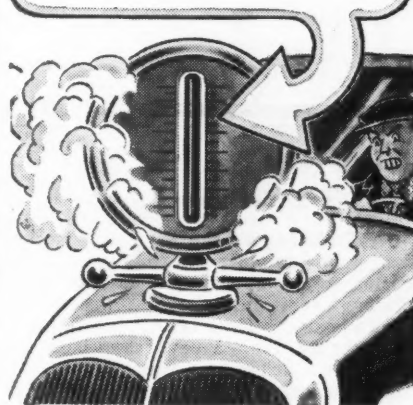


new type of soil testing outfit now on the market, lack of nutrients can be determined. This outfit enables every fruit grower to make tests on his own soil and thus make sure just which fertilizers and soil management practices are needed. This is always important to know when planning for spring fertilizing of fruits and for summer cover crops.

When you can't find that adjustable wrench, just take a long bolt, put two nuts on it, and adjust to fit any surface on which you wish to use the wrench.

AMERICAN FRUIT GROWER

IT'S HIGH TIME TO
CLEAN OUT WITH
SANI-FLUSH!



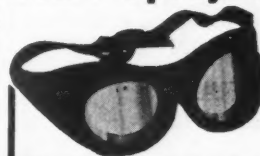
BEWARE of a truck that overheats! Power is being lost. The motor becomes sluggish. Extra strain is being put on the motor and you may run up a fat repair bill.

Save worry, power and expense. Just put 10 cents' worth of Sani-Flush in the radiator (directions are on the can). Run the motor. Drain, flush and refill with clean water.

Lime and rust are banished. Sludge and sediment are removed. Sani-Flush cannot injure aluminum cylinder heads or motor fittings. Kept in most bathrooms for cleaning toilet bowls. Sold by grocery, drug, hardware, and five-and-ten-cent stores—25 and 10 cent sizes. The Hygienic Products Company, Canton, Ohio.

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SUCCESSFUL ORCHARDS

● A "ROUND TABLE" PAGE FOR EVERY GROWER ●

OILED PAPER AND SCALD PREVENTION

SCALD is one of the common diseases of apples in storage. Authorities have attributed the appearance of this skin-ruining condition to the collection of gases about the fruit in storage containers. Shredded oiled paper has been the preventive measure against scald for many years and the experience of G. B. Renshaw, prominent Ohio grower, during the past season shows how an incidental happening might change certain of our fruit handling practices.

Says Mr. Renshaw: "For a number of years we have been using shredded oiled paper to prevent scald in our stored apples. Last fall we were putting the usual amounts of the paper in the storage crates with the fruit and expected that this amount of paper would handle the job as it had in the past. We were packing the last of the Yorks before placing them in storage. I noticed that we had a good bit of the paper left. Since this was the last of the apples to go into storage, I told the men to use up the rest of the paper for the remaining fruit.

"I didn't think any more about it until we started moving the apples out of storage. Then I noticed that the Yorks having the usual amount of paper in the crates were scalded. Those that had the extra paper had no scald.

"This convinced me that in the future we are going to put more oiled paper in the York packages and also with the other varieties that tend to scald badly. I believe that one-quarter pound of the shredded oiled paper to each bushel will be enough to prevent scald, and I'm going to use this amount or maybe a little more for all of my storage apples next fall."

RECORDS HELPFUL TO INDIANA GROWER

RECORDS, to some, may seem unnecessary and tedious to compile, but

This page is a place for growers to get together and exchange experiences and ideas. The beginner, as well as the veteran, will find here many practical suggestions for better and more profitable fruit growing. In return for the helps you receive from this page, be ready to pass on, for the benefit of others, any new idea, method or procedure you have developed or run across. Just jot it down as it occurs to you (a postcard will often do) and mail it to the "ROUND TABLE EDITOR," AMERICAN FRUIT GROWER. Don't worry about fancy writing. What the readers of this page want are practical pointers—that are to the point.

Homer J. Coffing, Indiana orchardist, finds that they are a real help. Here is what Mr. Coffing has to say:

"Our 325-acre orchard is covered by a stationary spray system and during the spring and summer our stationary spray plant is the center of activity. In the building which houses the spray plant and also is the storage for spray guns, hose, odd piping, valves, etc., we have a table on which is a large blueprint map of the orchard. On this map is charted the

spray lines and the outlets. The map also has a space for notes. Each time we spray we note the areas where the spraying is being done, the materials used, and the men who are doing the spraying. We also record the time that the spray is applied and the temperature. Each man has his own spray gun, so from this record we are able to tell even the spray guns which are used for each orchard area.

"Should there happen to be any spray injury or lack of control, we are able to check back over the records and nine times out of 10 we can locate the trouble. It doesn't take much time to jot down the notes as we are working about the spray plant, and there are many different ways the map and record help us. One of these is in valve replacement. When a new valve is placed on an outlet, it is marked on the map and it helps us determine which valves give the best service. Grafted trees are marked and we are able to tell the age of the grafts.

"Yields for the various areas and the replacements are also noted. This gives us quite a complete record of the orchard operation and we find that it proves of help many times during the year."

OLD TREES STILL GOOD PRODUCERS

PEACH trees are usually regarded as the shortest-lived of our orchard trees. Yet J. B. Whisnant, well-known Georgia grower, has a block of 36-year-old Elberta trees that is still consistently producing crops. Let Mr. Whisnant tell you about his patriarchal peaches.

"The block of 36-year-old Elberta peaches is probably the most outstanding thing about our fruit farm, which is made up of 100 acres of peaches and 50 acres of apples. All of the peaches are Elbertas, and there are many varieties of apples. I'm planning to put in 50 acres more of orchard and want to have early-season apple varieties in the new planting.

"On the old Elberta block we grow a crimson clover cover during the winter and then disk it down in the spring. The clover rots after it is disked. We raise our own seed and apply with chaff on top of the ground in October. It takes about 30 pounds of the chaff seed to the acre. This is the most inexpensive cover crop we have been able to find for our locality. The old trees are pruned lightly each year. Pruning has been done in this manner for so long that there are practically new trees on old stumps.

"Our orchard is located in the foothills of the southern range of the Cumberland Mountains and the trees are planted on ridges to provide air drainage. The plantings are terraced and at ends of several middles are ponds to catch the run-off water, which is used for spraying. We also obtain water from several wells for spraying purposes. Our sprayer is operated by a tractor take-off.

"Our young peaches are 12 years old but we still depend on the 36-year-old trees for a good portion of crop, which amounted to 35 cars of peaches last year."



Homer J. Coffing gets the temperature reading for his fruit farm record, described above, from this orchard thermometer, enclosed by wood case to protect from weather.

EXTRA

Orchard Brand News

EXTRA

VOL. 1, NO. 3

MAY

1937

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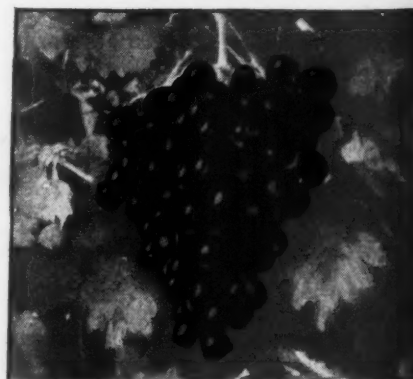
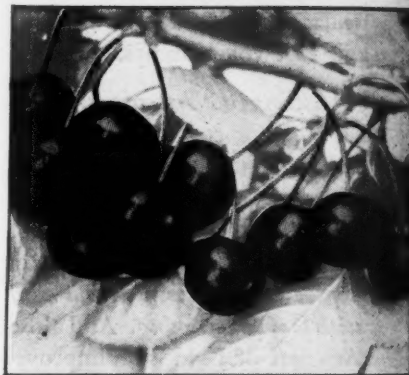
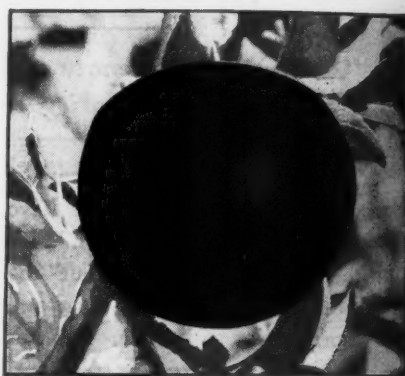
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